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NEW SPECIES OF *CHEUMATOPSYCHE* FROM THE SOUTHEASTERN UNITED STATES (HYDROPSYCHIDAE, TRICHOPTERA)[1]

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During the course of limnological studies in the southeastern states, two previously undescribed species of *Cheumatopsyche* were collected. These additions to the genus indicate that it forms a diverse and abundant element of the southeastern caddisfly fauna. We are indebted to Dr. J. Bruce Wallace of the University of Georgia and Dr. W. L. Peters of Florida A. & M. University and their colleagues for collecting much of the material.

Types are deposited in the University of Georgia insect collection.

Cheumatopsyche enigma new species

The extreme variability exhibited by the apical lobes of the male tenth tergite makes it difficult to compare this species with any particular one of its congeners. Specimens in which these lobes are almost truncate are suggestive of *gracilis* Banks, from which *enigma* differs in having the basal segment of the clasper relatively slender; specimens with these lobes approaching a rounded apex are suggestive of *aphanta* Ross, from which *enigma* differs in the shorter apical segment of the clasper and longer tenth tergite; and specimens with the lateral dorsal angles of the lobes produced into a somewhat pointed shoulder are suggestive of *gyra* Ross, from which *enigma* differs in having the lateral lobes more obliquely angled and contiguous. From all three of these species, *enigma* differs in the elongate male tenth tergite.

Male: Length 6 mm. Color of head, body, and appendages dark

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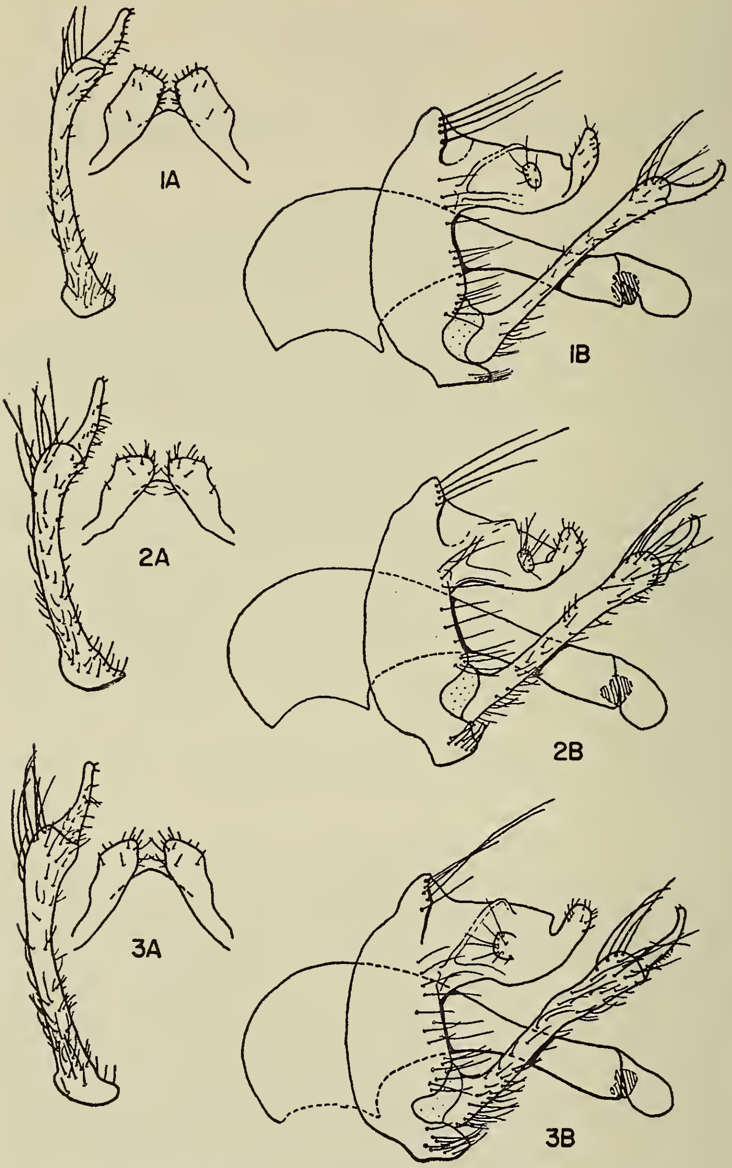


Figs. 1–3. Male genitalia of *Cheumatopsyche enigma.* A, posterior aspect of clasper and apical lobes of tenth tergite; *B*, lateral aspect of entire structure. 1, holotype; 2 and 3, two paratypes from Wildcat Creek, Clemson, S. C.

brown, the antennae, mouthparts, and legs with pale areas, forewings without light spots. General structure typical for genus. Genitalia as in figure 1. Ninth segment annular, dorsally with a pair of lateral lobes bearing several long setae. Tenth tergite long, with a small lateral pair of setose lobes situated before apex, the apex divided into a pair of prominent dorsally projecting lobes. In lateral view these lobes project in front of the mesal profile of the segment and appear pointed at the tip. In posterior view they are large and broad, definitely shouldered at base, and truncate at apex, moderately well separated from each other at the apex. Clasper with basal segment long and narrow; apical segment narrow, ¼ the length of the basal segment. Aedeagus with bulbous base large, apex with a pair of movable platelike processes.

Female: Length, color, and general structure as in male. Ninth segment as in figure 6. Clasper receptacle fairly large, with a ventral lip extending to about the mid point of the tenth segment; the groove leading to the receptacle sharply delineated antero-ventrally, this margin sometimes projecting slightly over the groove giving the visual appearance of a flange.

Holotype: Georgia, Union Co., 3.5 mi. N Neels Gap, Wolf Creek, 30 August 1945, P. W. Fattig.

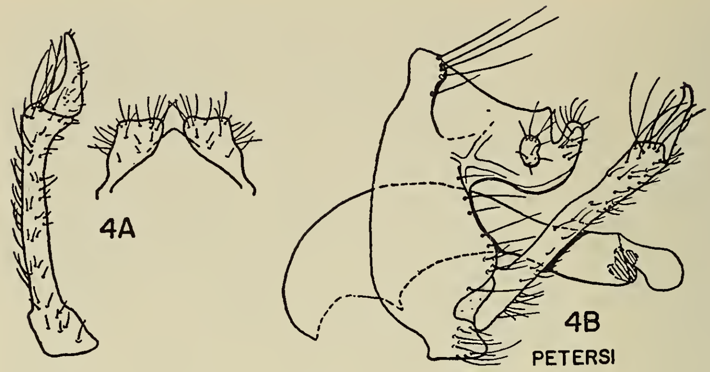
Paratypes: Georgia: Same data as holotype, 47♂, ♀; small cr. at junction highways 53 and 183, nr. Dawsonville, 1 April 1944, W. E. Ricker, 2♂. South Carolina: Pickens Co., Wildcat Cr., Clemson, 12 April 1968, P. Carlson, 1♂; same but 14 June, 2♂. Pickens Co., Eastatoe Cr., 17 May to 25 October 1969, H. Douglass and J. Morse, 66♂, ♀; South Saluda R., Table Rock, 28 April 1969, J. Morse, 3♀.

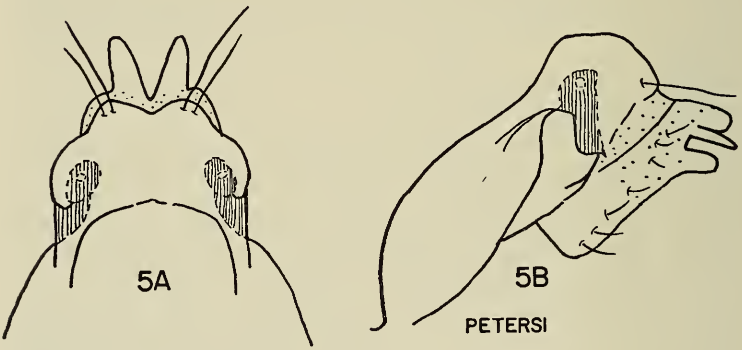
The variability in this species is unusually great. The above description and figure 1 are drawn from the holotype. In other males the tenth tergite may have prominent mound-like projections near the middle of the segment, one on each side of the meson and extending above it. The shape of the apical lobes of the tenth tergite also varies greatly, as illustrated in figures 2 and 3. Part of this difference is due to the fact that in most specimens these lobes are folded back laterally to a variable extent. A considerable range of variation is exhibited in the individuals collected at the same time and at any one locality; the collections from Wolf Creek and Wildcat Creek each exhibit an intergrading series of forms between these extremes in which the differences in character states of several characters occur randomly with respect to each other.

We know of no other species in the genus exhibiting this range of variability. It is highly suggestive of a situation in which two formerly isolated populations evolved morphological differences but no genetic incompatibility, then dispersed into each others ranges, the result being a highly variable hybrid mixture of character states.

Cheumatopsyche petersi new species

This species appears to be a close relative of *analis* Banks, from which it differs in the stouter apical segment of the clasper and the shouldered





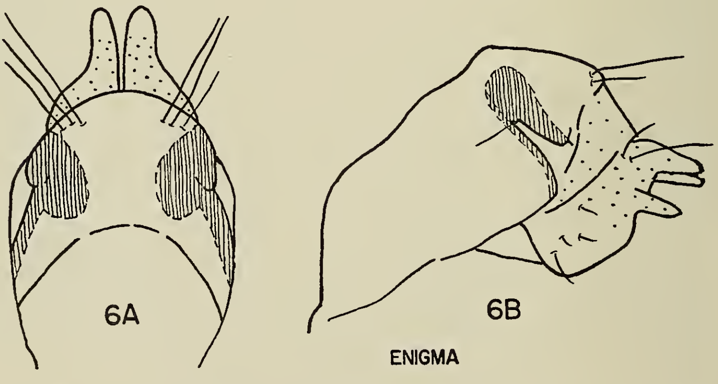


FIG. 4. Male genitalia of *Cheumatopsyche petersi*. *A*, posterior aspect of clasper and apical lobes of tenth tergite; *B*, lateral aspect of entire genitalia.

apical lobes of the tenth tergite which in lateral view do not project dorsally to the level of the mesal part of the tergite. The female differs in the shape of the clasper receptacle, which is more perpendicular than in *analis* and has a broad angular ventral lip not present in that species.

Male: Length 7 mm. Head, body, and legs dark brown, antennae and mouthparts also brown but paler at the base. Wings teneral, apparently chiefly dark brown with only a few small light areas. General structure typical for genus. Genitalia as in figure 4. Ninth segment annular, dorsally with a pair of lateral lobes bearing several setae. Tenth tergite moderately short, sloping down evenly from its juncture with the ninth tergite, with a pair of small, lateral, cushion-like lobes near the apex of the segment, the apex divided into a pair of dorsally-projecting lobes. In lateral view these lobes are relatively small and rounded dorsally, their apex below the level of the tergite; in posterior view they are almost truncate dorsally, giving the dorso-lateral portion a shouldered or angulate appearance. Clasper with apical segment elongate, ⅓ length of the basal segment, its lateral aspect slightly recurved, its posterio-ventral aspect broad at base, tapering to a narrow apex; posterio-ventral aspect of basal segment unusually narrow. Aedeagus with bulbous base relatively small and with a pair of movable plate-like processes at apex.

Female: Length, color, and general structure as in male. Ninth segment as in figure 5. Clasper receptacle only moderately large, in lateral view extending ventrally to about the mid point of the tenth segment, the ventral lip forming almost a right angle; the inner opening is minute and just below the apex. In dorsal view the clasper receptacle appears as a small ovate projection with the inner opening near the middle.

Holotype: FLORIDA, Okaloosa County, Blackwater River, 4.5 mi. NW Cannon Town, 7 April 1968, W. L. Peters et al.

Paratypes: FLORIDA: Okaloosa County, same data as holotype, 13♂, ♀; same but Bryant Bridge, 2½ mi. W Holt, 26 April to 29 May 1970, 231♂, ♀; same but Lily Bluff, 3 mi. NW Holt, 1 June 1970, 28♂, ♀; same but Peadton Bridge, 4½ mi NW Cannon Town, 25 April 1970, 7♀; same but Kennedy Bridge, 6 mi. W Blackman, 1 May 1970, 90♂, ♀. Santa Rosa County, field station 3½ mi. NW Holt, 24–25 April 1970, Peters et al., 1♀; same but 9 May 231♂, ♀.

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FIGS. 5, 6. Female genitalia of *Cheumatopsyche* species. *A*, dorsal aspect; *B*, lateral aspect.